

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Annual rept.

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS
BEFORE COMPLETING FORM

1. REPORT NUMBER NATICK/TR-78/661	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) BIBLIOGRAPHY OF TECHNICAL PUBLICATIONS AND PAPERS JULY 1976 - SEPTEMBER 1977.		5. TYPE OF REPORT & PERIOD COVERED Annual FY7T and FY77
6. AUTHOR(s)		7. PERFORMING ORG. REPORT NUMBER
8. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Natick Research & Development Command ATTN: DRXDM-TR Natick, MA 01760		9. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
10. CONTROLLING OFFICE NAME AND ADDRESS US Army Natick Research & Development Command		11. REPORT DATE Oct 1977
12. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES 61
		14. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) DEC 19 1977		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Research Army Natick Research & Development Command Reports Bibliographies Publications Documents Development Patents		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report contains a bibliographic listing of technical publications and papers presented by personnel of the US Army Natick Research & Development Command and its contractors for the period July 1976 through September 1977.		

PREFACE

This bibliography is a list of technical publications and papers by personnel of the US Army Natick Research and Development Command and its contractors for the period July 1976 through September 1977. The arrangement is by organizational elements. In most instances where an article was prepared jointly by personnel of more than one laboratory, the citation is listed fully under the laboratory of the senior author with a "see" reference under the laboratory of the junior authors.

Reprints of journal articles, in some cases, are available from the individual authors. Copies of technical reports may be obtained from (1) The Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314, or (2) the National Technical Information Service, Springfield, Virginia 22161. The "AD" number should be cited when ordering copies of reports. Those reports marked with an asterisk (*) are not available for distribution outside the agencies of the US Government. Technical papers refer to presentations for which no printed copies exist.

Technical Data Reference Branch
Technical Documentation Office

ACCESSION	
NTIS	
DDC	
UNANNOUNCED	
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist	
A	
SPECIAL	

CONTENTS

	<u>Page</u>
Office of the Commander	5
Deputy Commander	6
DOD Joint Technical Staff	7
Office of Technical Director	8
Operations Research and Systems Analysis Office	10
Technical Documentation Office	12
Aero-Mechanical Engineering Laboratory	13
Clothing, Equipment and Materials Engineering Laboratory	14
Food Engineering Laboratory	18
Food Sciences Laboratory	32

US ARMY NATICK RESEARCH AND DEVELOPMENT COMMAND

OFFICE OF THE COMMANDER

Journal Articles

1. LESTER, R. E., JR. Natick update. Activities Report, 29(2): 1-3 (1977).
2. WELBOURN, J., and R. E. LESTER, JR. Seminar and workshop on government and military specifications and procurement. Introduction. Activities Report, 29(2): 114-116 (1977).

Technical Papers

3. LESTER, R. E., JR. US Army Natick Research and Development Command update. Biltmore Hotel, New York, NY, April 1977.
4. _____ Remarks. Memorial Day Observance. Natick, MA, May 1977.
5. _____ Remarks. 25th Anniversary and Dedication Ceremony, US Army Natick Research and Development Command, Natick, MA, 31 May 1977.

REPRODUCED FROM SLIDE NOT FILMED

DEPUTY COMMANDER

Technical Papers

6. HEARN, J. L. The Hale Koa Hotel - AFRC, Fort DeRussy, Hawaii. Annual Retiree Day, Fort Devens, MA, 19 August 1976.
7. _____ The Hale Koa Hotel - AFRC, Fort DeRussy, Hawaii. Annual Retiree Day, Fort Devens, MA, 20 August 1976.
8. _____ What's Next? The Quartermaster School Officers Basic Class Graduation, The Quartermaster School, Fort Lee, VA, 16 December 1976.
9. _____ The Hale Koa Hotel - AFRC, Fort DeRussy, Hawaii. US Army Quartermaster Center & Fort Lee, Fort Lee, VA, 16 December 1976.
10. _____ Remarks. Personnel Managers Council Meeting, South Middlesex Area Chamber of Commerce, US Army Natick Research and Development Command, Natick, MA, 26 January 1977.
11. _____ Remarks. 1977 NARADCOM Prayer Breakfast, US Army Natick Research and Development Command, Natick, MA, 27 January 1977.
12. _____ The Hale Koa Hotel - AFRC, Fort DeRussy, Hawaii. New England Army Retiree Council Meeting, Fort Devens, MA, 18 February 1977.
13. _____ Remarks. Memorial Day Observance at Wildwood Cemetery, Ashland, MA, 30 May 1977.

DOD JOINT TECHNICAL STAFF

Technical Papers

14. HARKNESS, C. L. DOD Food Program in support of USMC requirements. USMC Liaison Officers' Conference, Quantico, VA, 15 February 1977.
15. KENYON, J. L. New developments. Food Science Department Graduate Seminar, University of Florida, Gainesville, FL, 6 October 1976.

Other Publications

16. BELEAU, M. H., D. VAN DIKE, N. D. HEIDELBAUGH, and H. A. WILCOX. An engineering concept for extensive aquaculture of kelp (*Macrocystis pyrifera*). First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 7 (1976).

OFFICE OF TECHNICAL DIRECTOR

Journal Articles

NICHOLS, T. L., E. ROSS, and E. BARRON. See entry no. 246.

17. ROSS, E. W. Maximum likelihood estimation of 12D for inoculated packs. J. Food Sci, 42(5): 1264-1268 (1977).

Technical Papers

18. ANDERSON, E. E. Latest developments in dehydrated foods. Annual Meeting, Dehydrated and Convenience Foods, Cameron Station, VA, 16-17 September 1976.
19. _____ R&D aspects of the DOD Food Program. Seminar at Industrial College of the Armed Forces, Washington, DC, 28 February 1977.
20. _____ USAF involvement in the DOD Food RDT & Eng Program. 9th Annual USAF Engineering and Services Conference, Omaha, NE, 14-16 September 1977.
21. EL-BISI, H. M. Management of DOD Food Program--update. General Committee on DOD Food Program, US Army Natick Research and Development Command, Natick, MA, 11-12 March 1976.
22. _____ Overview of DOD Food Program. Joint Meeting, NAS-NRC Advisory Board on Military Personnel & NAS-NRC General Committee on DOD Food Program, US Army Natick Research and Development Command, Natick, MA, 14-15 April 1977.
23. ROSS, E. W. Estimating 12D from one partial-spoilage data point. First International Congress on Engineering and Food, Boston, MA, August 1976.
24. _____ Maximum likelihood estimation of 12D for inoculated packs. 22nd Army Conference on Design of Experiments, Harry Diamond Laboratory, Delphi, MD, October 1976.

OFFICE OF TECHNICAL DIRECTOR

Technical Papers (continued)

25. ROSS, E. W. Stochastic analysis of parachute opening. Seminar on Stochastic Process, Army Research Office, Durham, NC, September 1976.
26. _____ Food for statistical thought. Society for Industrial and Applied Mathematics lecture, Rhode Island College, Providence, RI, December 1976.
27. _____ Statistical analysis of food-preservation tests. Society for Industrial and Applied Mathematics lecture, State University of New York, Stony Brook, NY, March 1977.
28. _____ Probability in food-testing. Natick High School, Natick, MA, April 1977.

OPERATIONS RESEARCH AND SYSTEMS ANALYSIS OFFICE

Technical Reports

29. BARITZ, S. G., R. L. BUSTEAD, H. J. KIREJCZYK, M. B. KULINSKI, H. L. MEISELMAN, G. J. SILVERMAN, R. S. SMITH, I. E. STEFANIW, and L. E. SYMINGTON. The Camp Pendleton experiment in battalion level feeding. 7T-4-OR/SA, July 1976 (AD A028 346).
30. BRANDLER, P., M. M. DAVIS, W. WILKINSON, L. SYMINGTON, D. D. SCHNACKENBERG, J. SIEBOLD, R. J. BYRNE, T. M. HILL, H. MEISELMAN, J. E. CANHAM, and F. CONSOLAZIO. An evaluation of an all commuted ration ashore/a la carte system for the Navy. NATICK/TR-77/011, January 1977 (AD A043 439).
31. KIREJCZYK, H. J., S. G. BARITZ, R. J. BYRNE, M. B. KULINSKI, R. S. SMITH, and I. E. STEFANIW. A cost and systems effectiveness analysis of consolidated field feeding for Army AIM divisions. NATICK/TR-77/003, October 1976 (AD A035 470).
32. KULINSKI, M., R. SMITH, and I. STEFANIW. A cost and systems effectiveness analysis of the XM-75 and SM-76 field feeding systems for Marine Corps divisions. 7T-10-OR/SA, July 1976 (AD A029 543).
33. LEITCH, D. P. Task analysis results for entry-level Navy food service enlisted personnel. 7T-12-OR/SA, September 1976.
34. NUSS, E. M., L. E. SYMINGTON, and T. T. MATTUS, JR. The impact of a modified training course on performance of US Coast Guard subsistence specialists. 7T-13, October 1976 (AD A032 793).

Journal Articles

35. BUSTEAD, R. L., and G. E. LIVINGSTON. Mass feeding in remote areas. Activities Report, 29(1): 66-69 (1976).
36. SMITH, R. S., and J. STONEHAM. Hospital food service. Activities Report, 29(1): 59-61(1976).

OPERATIONS RESEARCH AND SYSTEMS ANALYSIS OFFICE

Technical Papers

37. DAVIS, M., and P. BRANDLER. A methodology for predicting customer selection in a food service environment. Joint National Meeting, Operations Research Society of America/The Institute of Management Sciences, Miami, FL, 3-5 November 1976.
38. RICHARDSON, R. P. Towards a new U.S. military rations system. Computerized Methods of Preference Maximization for Food Management and Diet Control, University of Maryland, College Park, MD, 1 April 1977.
39. _____ Establishing institutional food cost levels to meet needs of customer populations. Food Service Systems - 1977, University of Massachusetts, Amherst, MA, 13-15 April 1977

Other Publications

40. SMITH, R. S. Systems analysis studies of combat feeding. In Proc., Third International Meeting, Food for the Armed Forces, 14-17 October 1975, US Army Natick Research and Development Command, Natick, MA. 76-42-OTD, pp. 306-310 (AD A022 648).

TECHNICAL DOCUMENTATION OFFICE

Technical Reports

41. Bibliography of technical publications and papers:
July 1975-June 1976, US Army Natick Research and
Development Command. 7T-1-TR, July 1976
(AD A030 472).

AERO-MECHANICAL ENGINEERING LABORATORY

Technical Reports

- CROUT, P. D., M. N. PILSWORTH, JR., and H. J. HOGE.
See entry no. 193.
42. DEBENEDICTIS, J. A., and C. J. MONEGO. Camouflage study of general purpose small and general purpose medium tents. Franklin Institute Research Laboratories, Contract No. DAAK03-74-C-0074. 76-7-AMEL, December 1974 (AD A031 181).
43. MONEGO, C. J., G. SMITH, S. J. SHURTLEFF, R. MONTI, J. F. MARONEY, and C. J. FRENNING. A cold temperature evaluation of the bonding adhesives used for MUST inflatable shelters. 76-26-AMEL, April 1975 (AD A030 635).
44. _____ Designing structures from fabrics. Industrial fabrics from structural stresses to fabric, yarn and fiber strength. NATICK/TR-77/016, April 1975 (AD A042 761).
45. MCCLAIN, L. A., and M. N. PILSWORTH, JR. A calorimeter design for rapidly estimating the level of foodborne microorganisms. 76-55-AMEL, December 1975 (AD A029 998).
46. PEARSON, A. E., and K. C. WEI. Control of a gliding parachute system in a non-uniform wind. Brown University, Contract No. DAAG17-73-C-0172. 76-60-AMEL, May 1976 (AD A036 076).
47. REMINGTON, P. J., J. C. O'CALLAHAN, and R. MADDEN. Finite-element analysis of scale-model frame-supported tents. Bolt, Beranek, and Newman, Inc., Contract No. DAAK03-74-C-0193. 76-21-AMEL, March 1975 (AD A028 837).

Technical Papers

48. CHAKOIAN, G. Airdrop systems research & development. Joint Meeting, American Society of Mechanical Engineers and Providence Engineering Society, Quonset Point Officer's Club, North Kingston, RI, 26 May 1977.

CLOTHING, EQUIPMENT AND MATERIALS ENGINEERING LABORATORY

Technical Reports

49. BENSEL, C., A. O. RAMSLEY, and W. B. BUSHNELL. Effect of patterned camouflage on target acquisition. NATICK/TR-77/017, (CEMEL-179), June 1977 (AD B020 819).*
50. CALABRESE, F. P., and R. D. WELLS. Batting type filling materials for sleeping bags. 76-41-CEMEL, (CEMEL-162), February 1976 (AD A032 336).
51. CHURCHILL, E., T. CHURCHILL, J. T. MCCONVILLE, and R. M. WHITE. Anthropometry of women of the US Army - 1977. Report No. 2 - The basic univariate statistics. Webb Associates, Inc., DAAG17-76-C-0010. NATICK/TR-77/024, (CE&MEL-173), June 1977.
52. DEVARAKONDA, V. A test unit for evaluating the mechanical endurance of slide fasteners (zippers). NATICK/TR-77/012, (CE&MEL-178), May 1977 (AD A040 228).
53. FLOOD, J. H. Lightweight combat footwear. Uniroyal, Inc., Contract No. DAAK03-74-C-0153. 76-54-CEMEL, (CEMEL-155), March 1976 (AD A032 213).
54. _____ Liquid-injection-molded, lightweight, insulated footwear. Uniroyal, Inc., DAAK03-74-C-0027. 76-39-CEMEL, (CEMEL-153), December 1975.
55. JAVIER, V. S. High abrasion oil resistant rubber compound for DMS combat footwear. 7T-9-CEMEL, (CEMEL-167), June 1976 (AD A042 246).
56. JUDGE, T. H., and M. B. KULINSKI. Evaluation of US Air Force survival/armor vest in US Army OH-58 helicopter. 7T-3-CEMEL, (CEMEL-161), February 1976.

CLOTHING, EQUIPMENT AND MATERIALS ENGINEERING LABORATORY

Technical Reports (continued)

57. LAUBACH, L. L., J. T. MCCONVILLE, E. CHURCHILL, and R. M. WHITE. Anthropometry of women of the US Army-1977. Report No. 1 - Methodology and survey plan. Webb Associates, Inc., Contract No. DAAG17-76-C-0010. NATICK/TR-77/021, (CE&MEL-172), June 1977 (AD A043 715).
58. LOCKHART, J. M., and C. K. BENSEL. The effects of layers of cold weather clothing and type of liner on the psychomotor performance of men. NATICK/TR-77/018, (CEMEL-171), June 1977 (AD A043 835).
59. MCMANUS, L. R., P. E. DURAND, and W. D. CLAUS. Development of new infantry helmet. 76-30-CEMEL, (CEMEL-152), January 1976 (AD A026 065).
60. RAMSLEY, A. O., B. A. NATSIOS, and A. MEROLA. Recoloring formulations for special camouflage applications. 76-57-CEMEL, (CEMEL-158), January 1977 (AD A038 689).
61. WALDRON, E. T., J. A. SOUSA, A. J. SZLACHTUN, A. C. DELASANTA, M. NAKASHIMA, and J. F. ROACH. Flame test for medical unit, self-contained transportable (inflatable shelter assembly). NATICK/TR-76/062, June 1977 (AD A043 370).
62. WARWICKER, J. O., and S. G. GRAHAM. Research on colorant systems whose characteristics may be reversed: Part II. Shirley Institute, Contract No. DAAK03-75-C-0043. 7T-2-CEMEL, (CEMEL-163), May 1976 (AD A041 306).

Journal Articles

63. LAIBLE, R. C., and F. J. MCGARRY. Toughening of high temperature resistant epoxy resins. Polymer-Plast. Technol. Eng., 7(1): 27-47 (1976).
64. MACNAIR, R. N., G. N. ARONS, and L. G. COFFIN. Sorptive composite fabrics containing activated-carbon yarns. Textile Res. J., 47(5): 324-327 (1977).

CLOTHING, EQUIPMENT AND MATERIALS ENGINEERING LABORATORY

Journal Articles (continued)

NICHOLS, T. L., E. ROSS, and E. BARRON. See entry no. 246.

Technical Papers

65. BARRON, E. The application of kevlar to military body armor: Design, construction, & comfort parameters of soft, lightweight inconspicuous armor for law enforcement personnel. Triangle J Council of Government's Justice Academy Lightweight Body Armor Workshop, McKinnon Center, Raleigh, NC, 14 July 1977.
66. _____ The application of kevlar to military body armor: Design, construction, & comfort parameters of soft, lightweight inconspicuous armor for law enforcement personnel. Third Lightweight Body Armor Medical Technical Symposium, Colorado Springs, CO, 18 August 1977.
67. BENSEL, C. Human factors consideration in the use of CW protective handwear. Topical Review of Chemical Warfare Personal Protective Equipment Program - US Army Natick Research and Development Command, Natick, MA, 19-20 May 1977.
68. CLAUS, W. D., JR. Bioengineering considerations in the design of protective headgear. American Society of Mechanical Engineers, New York, NY, 5 December 1976.
69. HEALY, E., D. FELDMAN, and E. WALDRON. Effect of 10.6 micron radiation on combat clothing. DoD Conference on Laser Effects, Wright-Patterson Air Force Base, OH, 16 May 1977.
70. JOHNSON, R. Cognitive strategies and cognitive style: Behavioral implications. 85th Annual Convention, American Psychological Association, San Francisco, CA, 26-30 August 1977.

CLOTHING, EQUIPMENT AND MATERIALS ENGINEERING LABORATORY

Technical Papers (continued)

71. LAIBLE, R., and R. MACNAIR. Recent research related to chemical protective clothing. The Technical Cooperation Program, Chemical Systems Laboratory, Edgewood, MD, 17 January 1977.
72. MACNAIR, R. Progress on chemical protective materials. Topical Review of Chemical Warfare Personal Protective Equipment Program, US Army Natick Research and Development Command, Natick, MA, 19-20 May 1977.
73. _____ Activated carbon textiles. 13th Biannual Conference on Carbon, Irvine, CA, 18-22 July 1977.
74. WILSON, A. Phosphazene rubber. Meeting of Elastomers and Plastics Group - New England Section, American Chemical Society, Waltham, MA, 17 January 1977.
75. _____ NARADCOM'S phosphazene rubber effort. Army, Navy & Air Force Meeting on Utilization of Phosphazene Polymers, Wright-Patterson Air Force Base, OH, 9 February 1977.
76. _____ Rubber: Its history, properties and applications. Naval Reserve Unit, Massachusetts Institute of Technology, Cambridge, MA, 19 September 1977.

Other Publications

77. MCMANUS, L. R., P. E. DURAND, W. D. CLAUS, JR., and J. H. GREENDALE. Development of a new infantry helmet. In Army Science Conference, 22-25 June 1976, Proc., 2: 421-435 (1976) (AD A026 065).

Patents

78. HANSEN, J. V. E. Non-destructive test method for assessing textile material degradation. US Patent No. 3,987,665, 26 October 1976.
79. DURAND, P. E., L. R. MCMANUS, and W. D. CLAUS, JR. Helmet. US Patent No. D242,088, 2 November 1976.

FOOD ENGINEERING LABORATORY

Technical Reports

80. HOWKER, J. J., G. W. SHULTS, and E. WIERBICKI. Effects of combined irradiation and thermal processing on canned beef. NATICK/TR-7T/005, (FEL-60), June 1976 (AD A037 690).
81. _____, R. S. KAHAN, and E. WIERBICKI. Radurization of fresh poultry. NATICK/TR-77/006, (FEL-61), July 1976 (AD A038 009).
82. MARTIN, T. G., III, and R. BECKER. Result of the assay of radiation sterilized beef for induced activity. 76-64-FEL, (FEL-56), September 1976 (AD A030 785).
83. MASUOKA, Y., I. T. NII, and E. M. POWERS. Quality evaluation of herbs and spices in military food systems. 76-52-FEL, (FEL-54), June 1976.
84. SALUNKHE, D. K., M. T. WU, and J. Y. DO. Long-term storage studies on dehydrated ration items and food packets. Utah State University, Contract No. DAAG17-73-C-0288. NATICK/TR-77/004, June 1976 (AD A037 358).
85. SHULTS, G. W., J. S. COHEN, and E. WIERBICKI. Radiation-inactivation of meat proteases as determined by a 14C-labeled hemoglobin method. 76-33-FEL, (FEL-48), November 1975.
86. SWIFT, J., and J. M. TUOMY. Evaluation of microwave tempering of meat for use in central food preparation facilities. 76-32-FEL, (FEL-49), June 1976 (AD A027 788).
87. TUOMY, J. M., G. C. WALKER, and L. C. HINNERGARDT. Pilot plant production of frozen entree items for the Navy. 76-31-FEL, (FEL-59), September 1976 (AD A031 327).
88. WALKER, G. C., J. M. TUOMY, and C. G. KANTER. Egg products for use in a cook-freeze system. 76-28-FEL, (FEL-57), August 1976 (AD A031 023).
89. WALKER, G. C., and J. M. TUOMY. Evaluation of frozen meat entrees. NATICK/TR-77/013, (FEL-64), June 1977 (AD A041 638).

FOOD ENGINEERING LABORATORY

Journal Articles

90. ANDREWS, W. P., and E. A. NEBESKY. Packaging systems. Activities Report, 29(2): 91-94 (1977).
91. COHEN, J. S., G. W. SHULTS, V. C. MASON, and E. WIERBICKI. Variables affecting the acceptability of radappertized ground beef products; effects of food grade phosphates, NaCl, fat level, and grinding methods. J. Food Sci., 42(2): 338-343 (1977).
92. DECAREAU, R. V. Consumers' research reports on microwave ovens. Microwave Energy Appl. News., 9(6): 3-4 (1976).
93. _____, J. K. PRIFTI, J. M. TUOMY, and D. E. WESTCOTT. Microwave systems permit reconstitution without loss in quality. Food Technol., 30(12): 36-38 (1976).
94. HAHN, R. R., and H. A. HOLLENDER. Ingredients, present and future. Activities Report, 29(2): 61 (1977).
95. HOLLENDER, H. A. The development of military specifications. Activities Report, 29(2): 128-130 (1977).
96. _____, and J. BROOKS. New products for the military services. Activities Report, 29(1): 43-46 (1976).
97. KILLORAN, J. J. Applications of radiation in packaging. Activities Report, 29(2): 104-107 (1977).
98. LAMPI, R. A., and J. H. HOLMAN. Natick food systems equipment programs. Activities Report, 29(1): 54-58 (1976).
99. LAZAR, M. E., and D. E. WESTCOTT. Engineered foods forecast. Activities Report, 29(2): 89-90 (1977).
100. LILIE, J., N. SHINOHARA, and M. G. SIMIC. The kinetics of ligand detachment from labile cobalt (II)-amine complexes in aqueous solutions. J. Amer. Chem. Soc., 98(21): 6516-6520 (1976).

FOOD ENGINEERING LABORATORY

Journal Articles (continued)

101. LIVINGSTON, G., and R. LAMPI. Food service equipment forecast. Activities Report, 29(2): 35-37 (1977).
102. NEBESKY, E. A., and M. KAREL. Packaging systems considerations. Activities Report, 29(1): 31-36 (1976).
103. PRELL, P. A. Preparation of reports and manuscripts which include sensory evaluation data. Food Technol., 30(11): 40-48 (1976).
104. SECRIST, J. Approaches to engineered reduced meat costs. Activities Report, 29(2): 74-75 (1977).
105. SELLERS, R. M., and M. G. SIMIC. Pulse radiolysis study of the reactions of some reduced metal ions with molecular oxygen in aqueous solutions. J. Amer. Chem. Soc., 98(20): 6145-6150 (1976).
106. SHULTS, G. W., J. J. HOWKER, and E. WIERBICKI. Effect of salt and sodium tripolyphosphate on texture, organic volatiles and sensory characteristics of irradiated and nonirradiated pork. J. Food Sci., 41(5): 1096-1101 (1976).
107. _____, J. S. COHEN, V. C. MASON, and E. WIERBICKI. Effects of fat level and radappertization dose level on the quality of pork rolls. J. Food Sci., 42(5): 1331-1335 (1977).
108. _____, J. S. COHEN, V. C. MASON, and E. WIERBICKI. Flavor and textural changes in radappertized chicken as affected by irradiation temperature, NaCl and phosphate additions. J. Food Sci., 42(4): 885-889 (1977).
109. SNYDER, O. P., JR., and H. MEISELMAN. Human factors in food service operations. Activities Report, 29(2): 54-60 (1977).
110. TAUB, I. A., P. ANGELINI, and C. MERRITT, JR. Irradiated food: validity of extrapolating wholesomeness data. J. Food Sci., 41(4): 942-944 (1976).

FOOD ENGINEERING LABORATORY

Journal Articles (continued)

111. TUOMY, J. M. Definition and measurement of meat texture in military development and procurement. J. Texture Studies, 7(1): 5-9 (1976).
112. WESTCOTT, D. E., and W. A. BRITTIN. Improving shelf-life rations. Activities Report, 29(1): 47-53 (1976).
113. WIERBICKI, E., J. J. HOWKER, and G. W. SHULTS. Effect of salt, phosphates and other curing ingredients on shrinkage of lean pork meat and the quality of smoked processed ham. J. Food Sci., 41(5): 1116-1121 (1976).

Technical Papers

114. CHENEY, R. P., M. G. SIMIC, M. Z. HOFFMAN, I. A. TAUB, and K. D. AMMUS. The one-electron reduction of pentacyanonitrosylferrate (II) in aqueous solution. American Chemical Society, New Orleans, LA, March 1977.
115. COHEN, J. S., and E. WIERBICKI. Thermal processing times and thermodynamic properties of canned meat rolls. Summer Meeting, American Society of Agricultural Engineers (ASAE), Raleigh, NC, 26-29 June 1977.
116. DECAREAU, R. V. Micro energy source oven. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, November 1976.
117. _____ Food service equipment technological trends. 25th Annual Food Technology Conference, University of Missouri, Columbia, MO, 3-4 March 1977.
118. _____ Microwaves and nutrition. National Microwave Power Institute & California State College at Northridge, Los Angeles, CA, 5 March 1977.

FOOD ENGINEERING LABORATORY

Technical Papers (continued)

119. DECAREAU, R. V. Controlling microwave heating. Symposium 1977, International Microwave Power Institute, Minneapolis, MN, 24-27 May 1977.
120. DRIVER, M. G., A. R. RAHMAN, and D. E. WESTCOTT. The effect of stabilizing additives on the texture of selected salad vegetables. National Meeting, American Chemical Society, San Francisco, CA, 29 August-3 September 1976.
121. HOLLENDER, H. A., and J. BROOKS. New products for the military services. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, November 1976.
122. _____ Food and packaging research & development. Texas Section, Institute of Food Technologists, Houston, TX, 3 February 1977.
123. HU, K. H. Update on food service equipment at USANARADCOM. Society for the Advancement of Food Service Research, Houston, TX, 31 October 1976.
124. _____ Energy program on food service equipment. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, November 1976.
125. KILLORAN, J. J. Effects of radiation on packaging materials. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, 19 April 1977.
126. KLIKA, M. V. Military research & development on foods. Marlboro Rotary Club, Marlboro, MA, 15 September 1976.
127. LAMPI, R. A. Introduction to workshop on food service equipment. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, November 1976.

FOOD ENGINEERING LABORATORY

Technical Papers (continued)

128. MANSUR, R. T. Reclassification of defects for marking of containers. Armed Forces Product Evaluation Committee Meeting, US Army Natick Research and Development Command, Natick, MA, 11-12 May 1977.
129. _____ Reinforcement requirements for packaging of meats inspected by HSC personnel. Armed Forces Product Evaluation Committee Meeting, US Army Natick Research and Development Command, Natick, MA, 11-12 May 1977.
130. _____ Final report on use of composite and plastic cans for frozen fruit juices. Armed Forces Product Evaluation Committee Meeting, US Army Natick Research and Development Command, Natick, MA, 11-12 May 1977.
131. _____ Elimination of steel strapping as a reinforcing material. Armed Forces Product Evaluation Committee Meeting, Ft. Lee, VA, 14-15 July 1977.
132. _____ Reclassification of shipping containers marking defects. Armed Forces Product Evaluation Committee Meeting, Ft. Lee, VA, 14-15 July 1977.
133. MCNUTT, J. New foods for the military. Simmons College, Food and Consumer Class, Boston, MA, 14 September 1976.
134. NEBESKY, E. A., and P. T. BURKE. New packaging developments in the Army. DARCOM 5th Annual Packaging Seminar, Norfolk, VA, 5-6 October 1976.
135. RAHMAN, A. R. Extending shelf life of foods of high perishability. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, November 1976.
136. _____ New techniques in food preservation. Texas A&M University, College Station, TX, 15 November 1976.

FOOD ENGINEERING LABORATORY

Technical Papers (continued)

137. RAHMAN, A. R. Replacing sulfur dioxide. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, November 1976.
138. _____ Recent advances in food preservations. Food Science & Technology, Oregon State University, Corvallis, OR, 8 February 1977.
139. _____ New innovation in compressed foods. Oregon State University, Corvallis, OR, 3 June 1977.
140. _____, N. KELLEY, and D. E. WESTCOTT. New techniques for the production of dense foods. 37th Annual Meeting, Institute of Food Technologists, Philadelphia, PA, 5-8 June 1977.
141. SCHULZ, G. L. Trends in food packaging. 25th Annual Food Technology Conference, University of Missouri, Columbia, MO, 4 March 1977.
142. SHIEH, J. J., M. Z. HOFFMAN, M. G. SIMIC, and I. A. TAUB. Interaction of radiation-generated free radicals with myoglobin and nitrosomyoglobin in aqueous solution. American Chemical Society, Chicago, IL, 28 August-2 September 1977.
143. SIMIC, M. G. Radiation chemistry in amino acid and peptides. Massachusetts Institute of Technology, Cambridge, MA, 29 August 1976.
144. _____, and I. A. TAUB. Mechanisms of inter- and intramolecular electron transfer in cytochromes. Faraday Society, Leicester, England, 21-25 March 1977.
145. _____ Techniques on pulse radiolysis: Ligand labilization processes. Gordon Conference on Inorganic Chemistry, New Hampton, NH, 2 August 1977.

FOOD ENGINEERING LABORATORY

Technical Papers (continued)

146. SIMIC, M. G., and R. C. RICHMOND. Effect of radiation on cis-dichlorodiammineplatinum (II) and DNA in aqueous solution. 8th L.H. Gray Conference, Cambridge, England, 5-9 September 1977.
147. SZCZEBLOWSKI, J. W., and E. A. NEBESKY. Tray-pack foods. IUFOST/CIIA Symposium, Karlsruhe, Germany, 23-24 August 1977.
148. TAUB, I. A. Radiation chemistry of food. National Research Council Committee on Food Irradiation, US Army Natick Research and Development Command, Natick, MA, 8 December 1976.
149. _____, J. W. HALLIDAY, J. E. WALKER, L. G. HOLMES, and F. M. ROBBINS. Stability of muscle proteins (myosin and actomyosin) irradiated at -40°C. Spring Meeting, American Chemical Society, New Orleans, LA, 23 March 1977.
150. _____ Radiation is good for your food. Chemia Symposia, Boston University, Boston, MA, 1 April 1977.
151. _____ Radiation chemistry of food; Stability of muscle proteins. Seminar in Food Proteins, Massachusetts Institute of Technology, Cambridge, MA, 26 April 1977.
152. _____, E. WIERBICKI, and A. BRYNJOLFSSON. Effect of irradiation on food proteins. 37th Annual Meeting, Institute of Food Technologists, Philadelphia, PA, 5-8 June 1977.
153. _____ Radiation chemistry of food: Basic concepts and results. Panel of Experts on Irradiation of Fresh & Frozen Poultry, Interdepartmental Committee on Radiation Preservation of Food, Beltsville, MD, 1 August 1977.

FOOD ENGINEERING LABORATORY

Technical Papers (continued)

154. TUOMY, J. M. Precooked bacon. National Research Council Committee on Microbiology of Foods, US Army Natick Research and Development Command, Natick, MA, October 1976.
155. WESTCOTT, D. E. Improving shelf life of rations. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, November 1976.
156. WIERBICKI, E., F. HEILIGMAN, W. FIDDLER, and A. E. WASSERMAN. Irradiation as conceivable way of reducing nitrites and nitrates in cured meats. Second International Symposium on Nitrite in Cured Meats, Zeist, The Netherland, 7-10 September 1976.

Other Publications

157. EMANI, S. H., J. M. FLINK, and A. R. RAHMAN. Compression of food during freeze drying. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 56 (1976).
158. GORFIEN, H., A. R. RAHMAN, and D. E. WESTCOTT. Compression of sauerkraut. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 55 (1976).
159. _____, A. R. RAHMAN, S. H. COHEN, and D. E. WESTCOTT. Frozen french fries heated in microwave ovens. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 72 (1976).

FOOD ENGINEERING LABORATORY

Other Publications (continued)

160. GORFIEN, H., A. R. RAHMAN, R. KLUTER, and D. E. WESTCOTT. Storage stability of canned vs frozen vegetables. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 49 (1976).
161. HALLIDAY, J., J. E. WALKER, and I. A. TAUB. Formation and lifetimes of free radicals in irradiated beef muscle protein. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, P. 83 (1976).
162. HARALAMPU, S. G., A. R. RAHMAN, and D. E. WESTCOTT. Development of dehydrated compressed cabbage for cole slaw. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 57 (1976).
163. HARRIS, N. E., D. E. WESTCOTT, R. A. KLUTER, and M. M. ROBERTSON. Bulgur-shelf life studies. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 44 (1976).
164. HEILIGMAN, F., J. S. COHEN, E. WIERBICKI, and V. C. MASON. Industrial productions and quality of whole carcass beef rolls used in the wholesomeness testing of radappertized beef. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 74 (1976).
165. HOLLENDER, H. A. Meal, Ready-to-Eat, Individual, latest U.S. operational ration. In Proc., Third International Meeting, Food for the Armed Forces, 14-17 October 1975. US Army Natick Research and Development Command, Natick, MA. 76-42-OTD, pp. 148-160. (AD A022 648)

FOOD ENGINEERING LABORATORY

Other Publications (continued)

166. JARRETT, R. D., and J. HALLIDAY. Dosimetry in support of wholesomeness studies. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 90 (1976).
167. JOSEPHSON, E. S., and H. C. JOHNSON. Recent developments in the U. S. Army food irradiation program. In Proc., Third International Meeting, Food for the Armed Forces, 14-17 October 1975. US Army Natick Research and Development Command, Natick, MA. 76-42-OTD, pp. 191-228. (AD A022 648)
168. KILLORAN, JOHN J. Irradiation of multilayered materials to improve performance for packaging of thermoprocessed foods. In Army Science Conference, 22-25 June 1976, Proc., 2: 293-302 (1976). (AD A026 056)
169. _____, J. S. COHEN, and E. WIERBICKI. Reliability of flexible packaging of radappertized beef under production conditions. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 87 (1976).
170. _____, J. J. HOWKER, and E. WIERBICKI. Reliability of the tinfoil can for packaging of radappertized beef under production conditions. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 86 (1976).
171. LAMPI, R. A. Flexible retort packaging. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 166 (1976).

FOOD ENGINEERING LABORATORY

Other Publications (continued)

172. LAMPI, R. A. Flexible vs. rigid packaging for operational rations. In Proc., Third International Meeting, Food for the Armed Forces, 14-17 October 1975. US Army Natick Research and Development Command, Natick, MA. 76-42-OTD, pp. 166-184. (AD A022 648)
173. MACDONALD, B. A. Gamma ray sterilization of meat products. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 79 (1976).
174. MARTIN, T. G. Health physics in food irradiation facilities. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 91 (1976).
175. RAHMAN, A. R. Dehydrated and compressed foods - foods of the future. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 54 (1976).
176. _____ Hydroponic agriculture - past, present and future. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 2 (1976).
177. _____, J. W. SHIPMAN, S. J. WALLNER, D. E. WESTCOTT, R. A. SEGARS, and J. G. KAPSALIS. Novel techniques for the preservation of crispness and tissue integrity of salad vegetables. In Army Science Conference, 22-25 June 1976, Proc., 3: 113-127 (1976). (AD A026 148)
178. REES, C. W., and J. M. CASPERSEN. Electron irradiation in the sterilization of meat. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 80 (1976).

FOOD ENGINEERING LABORATORY

Other Publications (continued)

179. SHULTS, G. W., V. C. MASON, J. S. COHEN, E. WIERBICKI, and J. J. HOWKER. Radappertized beef products, their technology and quality. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 75 (1976).
180. SIMIC, M. G., and I. A. TAUB. Radiolytic oxidation and reduction of iron-containing compounds relevant to meat. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 84 (1976).
181. TAUB, I. A., J. W. HALLIDAY, L. G. HOLMES, J. E. WALKER, and F. M. ROBBINS. Chemical effect of irradiating frozen, hydrated muscle proteins: myosin and actomyosin. In Army Science Conference, 22-25 June 1976, Proc., 3: 289-302 (1976). (AD A026 160)
182. _____, and R. A. KAPRIELIAN. Influence of phase and temperature on the chemistry of irradiated food. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 82 (1976).
183. TUOMY, J. M. Quality evaluation of frozen entree products. In Objective Methods For Food Evaluation; Proceedings of a Symposium, National Academy of Sciences, Washington, DC, 1976, pp. 63-67.
184. WESTCOTT, D. E. Latest developments in food compression. In Proc., Third International Meeting, Food for the Armed Forces, 14-17 October 1975. US Army Natick Research and Development Command, Natick, MA. 76-42-OTD, pp. 327-335. (AD A022 648)
185. WIERBICKI, E., F. HEILIGMAN, W. FIDDLER, and A. E. WASSERMAN. Irradiation as a conceivable way of reducing nitrites and nitrate in cured meats. Proceedings 2nd International Symposium on Nitrate in Meat Products, Zeist, The Netherlands, pp. 75-81, 92 (1976).

FOOD ENGINEERING LABORATORY

Other Publications (continued)

186. WIERBICKI, E., J. J. HOWKER, G. W. SHULTS, and V. C. MASON. Technology and quality improvements of radappertized meat products by the use of small additions of sodium chloride and condensed phosphates. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976. Digest of Papers, p. 76 (1976).

Patents

187. GLICKSTEIN, M., and J. M. TUOMY. Compressed, freeze-dried cottage cheese and method of making. US Patent No. 4,034,123, 5 July 1977.
188. RAHMAN, A. R. Method of compacting and freeze-drying particulate foods. US Patent No. 3,984,577, 5 October 1976.
189. _____, G. SCHAFER, W. SWANTAK, and K. M. PLUMMER. Method of extending the storage life of cut lettuce. US Patent No. 3,987,208, 19 October 1976.

FOOD SCIENCES LABORATORY

Technical Reports

- BARITZ, S. G., R. L. BUSTEAD, H. J. KIREJCZYK, M. B. KULINSKI, H. L. MEISELMAN, G. J. SILVERMAN, R. S. SMITH, I. E. STEFANIW, and L. E. SYMINGTON. See entry no. 29.
190. BAZINET, M. L., C. DIPIETRO, and C. MERRITT, JR. Thermal degradation studies of fibers and composite base materials. NATICK/TR-77/007, March 1977 (AD A037 604).
191. BISSETT, F. H., and L. A. LEVASSEUR. Analytical methods for nitroguanidine and characterization of its degradation products. NATICK/TR-76/47, January 1976 (AD A034 455).
192. BLUHM, A. L. Chemical characterization of nitrocellulose degradation products. 76-46-FSL, September 1976.
- BRANDLER, P., M. M. DAVIS, W. WILKINSON, L. SYMINGTON, D. D. SCHNACKENBERG, J. SIEBOLD, R. J. BYRNE, T. M. HILL, H. MEISELMAN, J. E. CANHAM, and F. CONSOLAZIO. See entry no. 30.
193. CROUT, P. D., M. N. PILSWORTH, JR., and H. J. HOGE. Response of polymers to tensile impact. 3. The integral equation, successive-substitution method applied to non-linear materials having time-dependence (creep, relaxation). 76-36-FSL, January 1976 (AD A031 396).
194. GREENBERGER, M., and A. M. KAPLAN. An evaluation of some zirconium-containing finishes as fungicides for the preservation of cotton fabric. NATICK/TR-77/015-FSL, July 1977 (AD A043 074).
195. HADLEY, W. H., T. E. CTVRTNICEK, and W. J. SEARCH. Disposal study (tires and other polymeric materials). Monsanto Research Corporation, Contract No. DAAK03-74-C-0136. 76-25-FSL, August 1976 (AD A039 453).

FOOD SCIENCES LABORATORY

Technical Reports (continued)

196. KLUTER, R. A., L. C. HINNERGARDT, and M. C. BROCKMANN. A storage study of six commercial soy protein ingredients combined with ground beef. 77-020-FSL, June 1977.
- NUSS, E. M., L. E. SYMINGTON, and T. T. MATTUS, JR. See entry no. 34.
197. ROGERS, M. R., A. M. KAPLAN, J. J. VITALIANO, and E. PILLION. Prevention of food residue spoilage in waste packaging from feeding systems utilized by personnel operating in a closed gaseous environment. 76-44-FSL, November 1975 (AD A032 727).
198. SIEBOLD, J. R., L. E. SYMINGTON, D. L. MAAS, and R. C. GRAEBER. Consumer and worker evaluation of cash food systems: Loring AFB (part II-long term findings). 7T-6-FSL, August 1976 (AD A032 468)
199. _____ Do people eat in dining halls as often as they say they do? 7T-11-FSL, August 1976 (AD A035 211).
200. STEIN, E. S., and H. L. MEISELMAN. The measurement of food attitudes and personality characteristics of US Air Force personnel in Alaska. NATICK/TR-77/019, March 1977 (AD A043 011).
201. TRAXLER, R. W. Biodegradation of alpha TNT and its production isomers. University of Rhode Island, Contract No. DAAG17-73-C-0276. 76-48-FSL, July 1975 (AD A029 346).
202. WATERMAN, D., N. COBEAN, and H. MEISELMAN. Evaluation of five food-rating-feedback cards: Final report. 76-58-FSL, March 1976 (AD A032 580).
203. WILEY, B. J., ed. Twenty-fifth conference on microbiological deterioration of military materiel, 16-18 November 1976. NATICK/TR-77/014, April 1977 (AD B019 427L).*

FOOD SCIENCES LABORATORY

Journal Articles

204. ADACHI, A., A. NIIJIMA, and H. L. JACOBS. An hepatic osmoreceptor mechanism in the rat: Electrophysiological and behavioral studies. *Amer. J. Physiol.*, 231(4): 1043-1049 (1976).
205. ANDERSON, W. G., C. Y. BYON, M. GUT, and F. H. BISSETT. ^{13}C NMR studies of the four 20,22-epoxycholesterols and the two 20(22)-dehydrocholesterols. *Tetrahed. Letters* No. 26, pp. 2193-2196 (1976).
206. ANDREN, R. K., R. J. ERICKSON, and J. E. MEDEIROS. Cellulosic substrates for enzymatic saccharification. *Biotechnol. & Bioeng. Symp.* No. 6, 177-203 (1976).
207. _____, and J. M. NYSTROM. Pilot scale production of cellulase and enzymatic hydrolysis of waste cellulose. *Amer. Inst. Chem. Eng. Symp. Series*, No. 158, 91-98 (1976).
208. _____, M. MANDELS, and J. E. MEDEIROS. Production of sugars from waste cellulose by enzymatic hydrolysis: primary evaluation of substrates. *Process Biochem.*, 11(8): 2-11 (1976).
209. ANELLIS, A., D. BERKOWITZ, and D. KEMPER. Comparative radiation death kinetics of *Clostridium botulinum* spores at low-temperature gamma irradiation. *J. Food Protect.*, 40(5): 313-316 (1977).
210. BALL, D. H., F. H. BISSETT, and R. C. CHALK. Synthesis of 6,1',6'tri-O-mesitylenesulfonyl sucrose, further examination of "tri-O-tosylsucrose", and the chemistry of 3,6:1',4':3',6'-trianhydrosucrose. *Carbohydr. Res.*, 55: 149-163 (1977).
211. BROSSUT, R., and L. M. ROTH. Tergal modifications associated with abdominal glandular cells in the Blattaria. *J. Morphol.*, 151(2): 259-297 (1977).
212. CHATTERJEE, S., F. M. ROBBINS, S. H. COHEN, and J. E. WALKER. Role of exogenous proteases in tenderization of meat. *The Nucleus*, 55: 12-14 (1977).

FOOD SCIENCES LABORATORY

Journal Articles (continued)

213. CHOWDHURY, M. S. U., D. B. ROWLEY, A. ANELLIS, and H. S. LEVINSON. Influence of postirradiation incubation temperature on recovery of radiation-injured *Clostridium botulinum* 62A spores. *Appl. Environ. Microbiol.*, 32(1): 172-178 (1976).
214. COHEN, S. H. The determination of tenderness: The role of sarcomere length measurements by optical methods, including laser diffraction. *The Nucleus*, 55: 14-15 (1977).
215. DOUPLE, E. B., R. C. RICHMOND, and M. E. LOGAN. Therapeutic potentiation in a mouse mammary tumor and an intracerebral rat brain tumor by combined treatment with cis-di-chlorodiammineplatinum (II) and radiation. *J. Clin. Hematol., Oncol.*, 7: 585-603 (1977).
216. DUBOSE, C. N., H. L. MEISELMAN, D. A. HUNT, and D. WATERMAN. Incomplete taste adaptation to different concentrations of salt and sugar solutions. *Perception & Psychophysics*, 21(2): 183-186 (1977).
217. FEEHERRY, F. E., and H. S. LEVINSON. Outgrowth of *Bacillus megaterium* spores in the presence of nitrate and ammonium ions. *J. Bacteriol.*, 127(2): 1026-1027 (1976).
218. FOX, M., and E. HAYON. Far ultraviolet solution spectroscopy of the bromide ion. *J. Chem. Soc., Faraday Trans I*, 73: 872-882 (1977).
219. _____, and E. HAYON. Far ultraviolet solution spectroscopy of the iodide ion. *J. Chem. Soc., Faraday Trans I*, 73: 1003-1016 (1977).
220. _____, and E. HAYON. Further correlations of the CTTS solvent scale for halides with V_{max} for the solvated electron. *J. Chem. Soc., Faraday Trans I*, 72: 1990-1996 (1976).

FOOD SCIENCES LABORATORY

Journal Articles (continued)

221. FREEMAN, L. R., G. J. SILVERMAN, P. ANGELINI, C. MERRITT, JR., and W. B. ESSELEN. Volatiles produced by microorganisms isolated from refrigerated chicken at spoilage. *Appl. Environ. Microbiol.*, 32(2): 222-231 (1976).
222. GIFFEE, J. W., and T. V. KUEPER. End item tests for quality assurance. *Activities Report*, 29(1): 37-42 (1976).
223. GINGRICH, J. B., J. J. PRATT, JR., and G. R. MANDELS. Potential of ultraviolet radiation for control of American cockroach populations. *Ent. Exp. & Appl.*, 21: 112-120 (1977).
224. HAND, C. W., C. MERRITT, JR., and C. DIPIETRO. Production of nitric oxide in the pyrolysis of aromatic nitro compounds. *J. Org. Chem.*, 42(5): 841-844 (1977).
225. HOLMES, L. G. Detection of soy proteins. *The Nucleus*, 55: 11-12 (1977).
226. KAPLAN, A. M. Microbial degradation of materials in laboratory and natural environments. *Develop. Indust. Microbiol.*, 18: 203-211 (1977).
227. KAPSALIS, J. G., and C. MERRITT, JR. The food chemistry research of the US Army Natick Research and Development Command. *The Nucleus*, 55: 8 (1977).
228. _____, and A. S. SZCZESNIAK. Instrumental testing of meat texture - comments on the past, present and future. *J. Texture Studies*, 7(1): 109-113 (1976).
229. _____, and H. R. MOSKOWITZ. The psychophysics and physics of food texture. *Food Technol.*, 31(4): 91-94, 99 (1977).
230. _____, and R. A. SEGARS. Rheological properties of meats (fresh, intermediate moisture and dehydrated). *Lebensm. Wiss.u.-Technol.*, 9(6): 383-385 (1976).

FOOD SCIENCES LABORATORY

Journal Articles (continued)

231. KRUSKI, A. W., and K. A. NARAYAN. Effect of orotic acid and cholesterol on the synthesis and composition of chicken (*Gallus domesticus*) serum lipoproteins. *Int. J. Biochem.*, 7(12): 635-638 (1976).
232. MADHAVAN, V., N. N. LICHTIN, and E. HAYON. Electron adducts of acrylic acid and homologs: Spectra, kinetics and protonation reactions. A pulse-radiolytic study. *J. Org. Chem.*, 41(13): 2320-2326 (1976).
233. MANDELS, M., R. ANDREOTTI, and C. ROCHE. Measurement of saccharifying cellulase. *Biotechnol. & Bioeng. Symp.*, No. 6, 21-33 (1976).
234. MANDELS, M. Saccharification technology: Summary. *Biotechnol. & Bioeng. Symp.*, No. 6, 221-222 (1976).
235. MCCORMICK, N. G., F. E. FEEHERRY, and H. S. LEVINSON. Microbial transformation of 2,4,6-trinitrotoluene and other nitro-aromatic compounds. *Appl. Environ. Microbiol.*, 31(6): 949-958 (1976).
236. MEISELMAN, H. L., and E. SKINNER. Consumer factors in food service. *Activities Report*, 29(1): 62-65 (1976).
237. _____ Psychology of taste. *Cereal Food World*, 21: 52-58 (1976).
238. _____, B. P. HALPERN, and G. P. DATEO. Reduction of sweetness judgements by extracts from the leaves of *Ziziphus jujuba*. *Physiol. & Behav.*, 17(2): 313-317 (1976).
239. MOORTHY, P. N., and E. HAYON. Dependence of the electron acceptor properties of nitrogen heteroaromatic compounds upon the state of protonation of the nitrogen atom. *Indian J. Chem.*, 14B: 206 (1976).

FOOD SCIENCES LABORATORY

Journal Articles (continued)

240. MOORTHY, P. N., and E. HAYON. One-electron redox reactions of water-soluble vitamins. 4. Thiamin (vitamin B₁), biotin, and pantothenic acid. J. Org. Chem., 42(5): 879-885 (1977).
241. MOSKOWITZ, H. R. Multidimensional scaling of odorants and mixtures. Lebens. Wiss.u.-Technol., 9(4): 232-238 (1976).
242. _____ The nature of acceptability functions in texture. J. Texture Studies, 7(2): 235-242 (1976).
243. _____, and C. D. BARBE. Profiling of odor components and their mixtures. Sensory Processes, 1(3): 212-226 (1977).
244. _____, and C. DUBOSE. Taste intensity, pleasantness and quality of aspartame, sugars, and their mixtures. J. Inst. Can. Sci. Technol. Aliment., 10(2): 126-131 (1977).
245. NARAYAN, K. A., J. J. MCNULLEN, D. P. BUTLER, T. WAKEFIELD, and W. K. CALHOUN. Serum lipoprotein concentration and synthesis, liver and serum lipids in rats maintained under conditions stimulating or inhibiting lipogenesis. Fed. Proc., 34(3): 939 (1975).
246. NICHOLS, T. L., E. ROSS, and E. BARRON. A method for the reduction and analysis of data in the design of body armor. Proc., 1975 Army Numerical Analysis and Computers Conference, pp. 425-441 (1975).
247. NYSTROM, J. M., and A. L. ALLEN. Pilot scale investigations and economics of cellulase production. Biotechnol. & Bioeng. Symp. No. 6, 55-74 (1976).

FOOD SCIENCES LABORATORY

Journal Articles (continued)

248. PEITERSEN, N., J. MEDEIROS, and M. MANDELS. Adsorption of *Trichoderma* cellulase on cellulose. *Biotechnol. Bioeng.*, 19(7): 1091-1094 (1977).
249. _____ Continuous cultivation of *Trichoderma viride* on cellulose. *Biotechnol. Bioeng.*, 19(3): 337-348 (1977).
250. POBER, Z. Effect of pylorotomy on inhibition of gastric secretion by intestinal acidification. *Amer. J. Digest. Dis.*, 21(6): 448-452 (1976).
251. _____, and G. J. SILVERMAN. Modified radioimmunoassay determination for staphylococcal enterotoxin B in foods. *Appl. Environ. Microbiol.*, 33(3): 620-625 (1977).
252. PORTER, W. L. Research on antioxidants and lipid autoxidation in the food chemistry group. *The Nucleus*, 55: 8-10 (1977).
253. POWERS, E. M., T. G. LATT, and T. BROWN. Incidence and levels of *Bacillus cereus* in processed spices. *J. Milk Food Technol.*, 39(10): 668-670 (1976).
254. RAMPTON, J. H., A. M. PEARSON, J. E. WALKER, J. G. KAPSALIS, and C. E. BODWELL. Urea-disc-electrophoresis of actin, tropomyosin, troponin, α -actinin, β -actinin and the extra protein fraction from striated muscle. *Food Chem.*, 2(1): 7-18 (1977).
255. _____, A. M. PEARSON, P. J. BECHTEL, J. E. WALKER, and J. G. KAPSALIS. Urea disc-gel electrophoresis of rabbit and bovine myosin. *Food Chem.*, 1(1): 49-55 (1976).
256. REESE, E. T. Cellulase production: Summary. *Biotechnol. & Bioeng. Symp. No. 6*, 91-93 (1976).
257. _____ History of the cellulase program at the U.S. Army Natick Development Center. *Biotechnol. & Bioeng. Symp. No. 6*, 9-20 (1976).

FOOD SCIENCES LABORATORY

Journal Articles (continued)

258. RICHMOND, R. C., and E. L. POWERS. Radiation sensitization of a bacterial spore by cis-di-chlorodiammineplatinum (II) and other metals. J. Clin. Hematol. Oncol., 7: 580-584 (1977).
259. ROBBINS, F. M., and S. H. COHEN. Effects of catheptic enzymes from spleen on the microstructure of bovine semimembranosus muscle. J. Texture Studies, 7(1): 137-142 (1976).
260. ROGERS, M. R., A. M. KAPLAN, J. J. VITALIANO, and E. PILLION. Military individual and small group water disinfecting systems: an assessment. Military Medicine, 142(4): 268-277 (1977).
261. ROTH, L. M. A taxonomic revision of the Panesthiinae of the world. I. The Panesthiinae of Australia (Dictyoptera: Blattaria:Blaberidae). Australian J. Zool., Suppl. no. 48: 1-112 (1977).
262. SEGARS, R. A., and J. G. KAPSALIS. Contribution of the US Army Natick Research and Development Center to the objective measurement of the textural quality of meat. J. Texture Studies, 7(1): 129-136 (1976).
263. SPANO, L., J. MEDEIROS, and M. MANDELS. Enzymatic hydrolysis of cellulosic wastes to glucose. Resource Recovery and Conservation, 1: 279-294 (1976).
264. _____ Raw material sources: summary. Biotechnol. & Bioeng. Symp. No. 6, 273-274 (1976).
265. STERNBERG, D., P. VIJAYAKUMAR, and E. T. REESE. β -Glucosidase: microbial production and effect on enzymatic hydrolysis of cellulose. Canad. J. Microbiol., 23(2): 139-147 (1977).
266. _____ A method for increasing cellulase production by Trichoderma viride. Biotechnol. Bioeng., 18: 1751-1760 (1976).

FOOD SCIENCES LABORATORY

Journal Articles (continued)

267. STERNBERG, D. Production of cellulase by Trichoderma. Bio-technol. & Bioeng. Symp. No. 6, 35-53 (1976).
268. TAIT, A. M., M. Z. HOFFMAN, and E. HAYON. The reaction of radiation-generated free radicals with cobalt (II) and cobalt (III) complexes containing macrocyclic ligands. Int. J. Radiat. Phys. Chem., 8(6): 691-696 (1976).
- TAUB, I. A., P. ANGELINI, and C. MERRITT, JR. See entry no. 110.
269. TISINGER, J. L., and R. C. GRAEBER. Use of oral antibiotics in studies of ingestive behavior in rats. Physiol. & Behav., 17(5): 861-864 (1976).
270. TOLLENAAR, D. Dietary fat level as affecting running performance and other performance-related parameters of rats restricted or non-restricted in food intake. J. Nutr., 106(11): 1539-1546 (1976).
271. _____ Dietary potassium and sodium as affecting work output and other physical performance of rats. Nutrition Reports Internat., 15(4): 483-492 (1977).
272. TREININ, A., and E. HAYON. Quenching of triplet states by inorganic ions. Energy transfer and charge transfer mechanisms. J. Amer. Chem. Soc., 98(13): 3884-3891 (1976).
273. WATSON, C. S., and T. L. NICHOLS. Detectability of auditory signals presented without defined observation intervals. J. Acoust. Soc. Amer., 59(3): 655-688 (1976).

Technical Papers

274. ANDREN, R. K., and R. J. ERICKSON. The enzymatic saccharification of wood pulp. Canadian Wood Chemistry Symposium, Mont Gabriel, P.Q., Canada, September 1976.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

275. ANELLIS, A. Comparative radiation death kinetics of Clostridium botulinum spores at low temperature gamma irradiation. Interagency Botulism Research Coordinating Committee, Atlanta, GA, 30 September-1 October 1976.
276. _____, E. SHATTUCK, M. MORIN, B. SRISARA, and D. B. ROWLEY. Cryogenic radappertization of pork. 77th Annual Meeting, American Society for Microbiology, New Orleans, LA, 8-13 May 1977.
277. BECKER, E., M. TEGHTSOONIAN, and B. EDELMAN. Perceived satiety during and after a meal. Sixth International Congress of Physiology and Food Intake, Paris, France, 15-17 July 1977.
278. CHATTERJEE, S., and F. M. ROBBINS. The ESR and CD spectra of chemically modified enzymes. American Chemical Society, San Francisco, CA, 30 August 1976.
279. EDELMAN, B. Magnitude estimation as a method for assessing food perception. Eastern Psychological Association, Boston, MA, 13-16 April 1977.
280. FEEHERRY, F. E., and H. S. LEVINSON. Heat activation of Clostridium perfringens spores. American Society for Microbiology, Boston College, Weston, MA, 14 January 1977.
281. GIFFEE, J. W. End item tests for quality assurance. Research and Development Associates for Military Foods and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, 9-11 November 1976.
282. _____ Objective methods for determining food standards compliance. American Veterinary Medical Association, Atlanta, GA, 11-14 July 1977.
283. HALPERN, B. P., and H. L. MEISELMAN. A new model for taste psychophysics: the role of pulsatile stimulation. Sixth International Symposium on Olfaction and Taste, Paris, France, 15-17 July 1977.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

284. HUNT, D. A., C. N. DUBOSE, and H. L. MEISELMAN. Individual subject consistency and tactile stimulus components as factors in taste adaptation experiments. Eastern Psychological Association, Boston, MA, 13-16 April 1977.
285. KAPLAN, A. M. Microbial degradation of materials in laboratory and natural environments. Society for Industrial Microbiology, Jekyll Island, GA, 14-20 August 1976.
286. _____ Education for industrial microbiologists. 77th Annual Meeting, American Society for Microbiology, New Orleans, LA, 8-13 May 1977.
287. KAPSALIS, J. G. Recent developments in texture studies and measurements. Massachusetts Institute of Technology, Cambridge, MA, 6 December 1976.
288. _____, and R. A. SFGARS. The usefulness of mechanical texture measurements to the consumer. American Society of Rheology, New York, NY, 28 February-2 March 1977.
289. _____ Rheological properties of meats (fresh, intermediate moisture, and dehydrated). National Institute for Research, Athens, Greece, August 1977.
290. LEVINSON, H. S. Activation, germination, and outgrowth of spores of Bacillus megaterium. Department of Food Science, University of Massachusetts, Amherst, MA, 21 April 1976.
291. _____ Transition of bacillus spores from dormancy to active metabolism. Microbiology Department, University of Maine, Orono, ME, 8 October 1976.
292. _____ Heat activation of spores of Clostridium perfringens. Connecticut Valley Branch, American Society for Microbiology, University of Massachusetts, Amherst, MA, 15 April 1977.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

293. LEVINSON, H. S., and F. E. FEEHERRY. Kinetics of heat activation of Clostridium perfringens spores. 77th Annual Meeting, American Society for Microbiology, New Orleans, LA, 9 May 1977.
294. _____ Spores and their activation. Massachusetts Institute of Technology, Department of Nutrition and Food Science, Cambridge, MA, 31 May 1977.
295. MABROUK, A. F., and L. G. HOLMES. Aqueous flavor precursors. Free nitrogenous compounds, sugars and organic acids in red meats. 172nd Meeting, American Chemical Society, San Francisco, CA, 3 September 1976.
296. _____ Flavor of lamb and mutton. Committee on "Increased Efficiency in Marketing Lamb and Mutton", San Francisco, CA, 19-23 October 1976.
297. _____ High pressure liquid chromatography of organic acids. 172nd Meeting, American Chemical Society, San Francisco, CA, 29 August-3 September 1976.
298. _____ Meat flavor research at USA NARADCOM. Rutgers University, New Brunswick, NJ, 2 November 1976.
299. _____ Non-enzymic browning. Effect of pH, temperature, and molecular structure of amino acids on development of color, odor, and aroma in ribose-amino acids systems. 174th National Meeting, American Chemical Society, Chicago, IL, 28 August-2 September 1977.
300. _____ Studies on the effect of processing on beef flavor. Changes in aqueous flavor precursors. 174th National Meeting, American Chemical Society, Chicago, IL, 28 August-2 September 1977.
301. MANDELS, G. R., E. T. REESE, and D. STERNBERG. Physiology of Trichoderma. Second International Mycological Congress, Tampa, FL, 30 August 1977.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

302. MANDELS, M. Cultivation techniques. International Course in Biochemical Engineering and Bioconversion, Indian Institute of Technology, New Delhi, India, 6-19 February 1977.
303. _____ Problems and challenges in the cellulose to cellulase fermentation. International Course in Biochemical Engineering and Bioconversion, Indian Institute of Technology, New Delhi, India, 6-19 February 1977.
304. _____ Effect of fermentations variable on growth and enzyme production by Trichoderma. International Symposium on Bioconversion of Cellulosic Substances in Energy, Chemicals and Microbial Protein. Indian Institute of Technology, New Delhi, India, 20-23 February 1977.
305. MCCORMICK, N. G. Fungal biotransformation of 2,4-dinitrotoluene. 77th Annual Meeting, American Society for Microbiology, New Orleans, LA, 8-13 May 1977.
306. MEISELMAN, H. L., D. WATERMAN, and N. L. COBEAN. Evaluation of five food-rating-feedback cards. 18th Annual Conference, Military Testing Association, Gulf Shores, AL, 18-22 October 1976.
307. _____, and B. P. HALPERN. A new model for taste psychophysics: the role of taste adaptation. Sixth International Symposium on Olfaction and Taste, Paris, France, 15-17 July 1977.
308. MERRITT, C., JR. Applications of combined pyrolysis-gas chromatography-mass spectrometry to the analysis and evaluation of polymeric materials. Symposium on Critical Review of Techniques for the Characterization of Polymeric Materials. Army Materials & Mechanics Research Center, Watertown, MA, July 1976.
309. _____, D. H. ROBERTSON, and R. A. GRAHAM. Elucidation of functional groups by means of selected binary encoded spectra. 7th International Mass Spectrometry Conference, Florence, Italy, September 1976.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

310. MERRITT, C., JR., M. L. BAZINET, R. E. SACHER, and J. SPROUSE. Laser pyrolysis-gas chromatographic-mass spectromic analysis of epoxy composites. Third International Symposium on Analytical Pyrolysis, Amsterdam, The Netherlands, 7-9 September 1976.
311. _____, S. G. KAYSER, and B. A. BIDLINGMEYER. Liquid chromatographic separation, identification and determination of triglycerides, polyglycol esters and related compounds in fats and oils. International Symposium on Advances in Chromatography, Houston, TX, 1-5 November 1976.
312. MEYERS, S. Phospholipid metabolism in Rhodospirillum rubrum. American Society for Microbiology, Boston College, Weston, MA, 14 January 1977.
313. _____ Ethanol fermentation during enzymatic hydrolysis of cellulose. American Institute of Chemical Engineers, Denver, CO, 30 August 1977.
314. MOON, R. D. Taste, flavor and ingestion patterns. Eastern Psychological Association, Boston, MA, 13-16 April 1977.
315. NARAYAN, K. A. Nutrition and cancer. Foods and Nutrition Department, University of Georgia, Athens, GA, September 1976.
316. _____ Factors affecting lipoprotein metabolism. Eastern Regional Laboratories, U.S. Department of Agriculture, Philadelphia, PA, November 1976.
317. NYSTROM, J. Pilot plant conversion of cellulose to glucose. US/Republic of China Seminar on Microbial Synthesis, Cambridge, MA, 23-27 August 1976.
318. _____ Some thoughts on the development and commercialization of cellulase technology. American Chemical Society, San Francisco, CA, 29 August-3 September 1976.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

319. NYSTROM, J. Engineering aspects of cellulose hydrolysis. Engineering Colloquium, Tufts University, Medford, MA 14 October 1976.
320. _____ Reclamation of nutritional value from tropical agricultural wastes. Rhode Island Chapter, American Institute of Chemical Engineers, Cranston, RI, 9 December 1976.
321. PEITERSEN, N. Fermentation of barley straw by Trichoderma viride. Recovery and nutritive value of the fermentation product. 81st National Meeting, American Institute of Chemical Engineers, Kansas City, MO, April 1976.
322. _____ Continuous cultivation of Trichoderma. Department of Chemical and Biochemical Engineering, University of Pennsylvania, Philadelphia, PA, 9 December 1976.
323. _____ Continuous cultivation of Trichoderma viride on cellulose. American Society for Microbiology, Boston College, Weston, MA, 14 January 1977.
324. _____ Continuous fermentation of Trichoderma viride on cellulose. Massachusetts Institute of Technology, Cambridge, MA, 29 January 1977.
325. _____ Cell mass production and substrate consumption. International Symposium on Bioconversion of Cellulosic Substances into Energy, Chemicals, and Microbial Protein. India Institute of Technology, New Delhi, India, February 1977.
326. _____ Transient response of Trichoderma growing on cellulose in a continuous flow culture. International Symposium on Bioconversion of Cellulosic Substances into Energy, Chemicals, and Microbial Protein. India Institute of Technology, New Delhi, India, February 1977.
327. _____ Single cell protein from cellulose. Food & Agricultural Engineering Department, University of Massachusetts, Amherst, MA, 26 April 1977.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

328. PEITERSEN, N. Production of cellulases and enzymatic hydrolyses of cellulose. Chemical Engineering Department, University of Waterloo, Ontario, Canada, 28 April 1977.
329. _____ Course on microbial degradation of cellulosic residues. National Polytechnic Institute, Mexico City, Mexico, 12-16 September 1977.
330. POWERS, E. M. The LTVIC agar plate method. American Society for Microbiology, Boston College, Weston, MA, 14 January 1977.
331. _____ Simplified 48 hour LTVIC test; Agar plate method I - Development. 77th Annual Meeting, American Society for Microbiology, New Orleans, LA, 8-13 May 1977.
332. PREVITE, J. J., P. RUDENAUER, and D. B. ROWLEY. Development of a specific radiometric coliform assay. 77th National Meeting, American Society for Microbiology, New Orleans, LA, 8-13 May 1977.
333. REESE, E. T. Microbial decomposition of polymeric carbohydrates. Phytochemical Society of North America, Vancouver, Canada, 8 August 1976.
334. RICHMOND, R. C. Radiation-induced lesions of DNA. American Society for Microbiology, Boston College, Weston, MA, 14 January 1977.
335. ROWLEY, D. B. A radiometric screening method for estimating the level of aerobic mesophilic bacteria in foods. 2nd International Symposium on Rapid Methods and Automation in Microbiology, Cambridge, England, 17-30 September 1976.
336. _____ Microbiological aspects of food irradiation. International Food Technology Seminar, Philadelphia, PA, 3 November 1976.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

337. ROWLEY, D. B. Radappertized meats: safety and quality. Annual Seminar, Microbiology and Preservation of Foods. Philadelphia Section, Institute of Food Technologists, Philadelphia, PA, 3 November 1976.
338. _____ Microbiological aspects of radappertization. Campbell Institute for Food Research Seminar, Camden, NJ, 4 November 1976.
339. _____, J. J. PREVITE, and H. P. SRINIVASA. A rapid radiometric estimate of the concentration of bacteria in cooked, frozen vegetables, poultry and meats. Annual Fall Meeting, Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Command, Natick, MA, 9 November 1976.
340. _____ Public health aspects of freeze dehydration. Seminar on Attributes of Freeze Dried Products. US Army Natick Research and Development Command, Natick, MA, 1 December 1976.
341. _____ Microbiological safety of military foods and feeding systems. 1977 NC-120 Research Committee on Safety of Foods and Feeding Systems, Peoria, IL, 27-28 January 1977.
342. _____, H. P. SRINIVASA, and J. J. PREVITE. Use of sodium formate in the radiometric determination of microbial acceptability of cooked vegetables. 77th Annual Meeting, American Society for Microbiology, New Orleans, LA, 8-13 May 1977.
343. _____ Microbiological aspects of certain military foods and feeding systems. Cooperative State Research Service Technical Staff, US Department of Agriculture, Washington, DC, 25 May 1977.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

344. ROWLEY, D. B. Microbiological considerations in the low-dose (1 Mrad) irradiation of foods. Interdepartmental Committee on Radiation Preservation of Food, Panel on Irradiation of Poultry and Poultry Products, Beltsville, MD, 1 August 1977.
345. SEGARS, R. A., and J. G. KAPSALIS. Two-dimensional viscoelastic model for simulating the compression of meat. National Science Foundation Workshop on Characterization of Mechanical Properties of Food Materials, Rutgers University, New Brunswick, NJ, 21-23 November 1976.
346. SILVERMAN, G. Microbiological assessment of food service operations. Food service systems: Their analysis, design and implementation. Food Science Associates, Framingham, MA, 7-9 April 1976.
347. _____ Production of staphylococcal enterotoxin A. Fourth Annual Food Microbiology Conference, Chicago, IL, 9-12 November 1976.
348. SPANO, L. A. Enzymatic conversion of cellulose to glucose. Union Carbide Research Laboratories, Tarrytown, NY, 13 January 1976.
349. _____ Enzymatic hydrolysis of cellulosic materials. Microbial Energy Conference, Göttingen, Germany, 5 October 1976.
350. _____ Enzymatic conversion of cellulose to glucose. Azzioni Nazionali Idro Carburì Seminar, Milan, Italy, 15 October 1976.
351. _____ Enzymatic conversion of cellulose to glucose. Azzioni Nazionali Idro Carburì Seminar, Rome, Italy, 22 October 1976.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

352. SPANO, L. A. Enzymatic conversion of cellulose to glucose. Association pour la Promotion Industrie Agriculture Seminar, Paris, France, 28 October 1976.
353. _____ Characterization of biologically treated waste streams. Environmental Quality Research Technical Coordination Meeting, Edgewood Arsenal, Edgewood, MD, 24-25 March 1977.
354. STEIN, E. S. Job knowledge testing as a measure of training effectiveness. 18th Annual Conference, Military Testing Association, Gulf Shores, AL, 18-22 October 1976.
355. SYMINGTON, L. E. Organizational effectiveness related to non-MOS task performance of a critical subgroup. 18th Annual Conference, Military Testing Association, Gulf Shores, AL, 18-22 October 1976.
356. _____ Worker job satisfaction and opinion in food service system design. 18th Annual Conference, Military Testing Association, Gulf Shores, AL, October 1976.
- TAUB, I. A., J. W. HALLIDAY, J. E. WALKER, L. G. HOLMES, and F. H. ROBBINS. See entry no. 149.
357. THOMAS, M. H. How did you supervene to Japan? International Woman's Year Luncheon, US Army Garrison, Honshu, Japan, October 1975.
358. _____ What's new at Natick Development Center. National Food Research Institute, Tokyo, Japan, November 1975.
359. _____ Development of military ration items with civilian spin-off. Central Food Technological Research Institute, Mysore, India, January 1976.

FOOD SCIENCES LABORATORY

Technical Papers (continued)

360. THOMAS, H. H. Recent research at U.S. Army Natick Development Center. National Dairy Research Institute, Bangalore, India, January 1976.
361. _____ Federal Woman's Program at U.S. Army Natick Development Center. All India Women's Conference, New Delhi, India, March 1976.
362. _____ Military innovations with civilian spinoff. Unilever, Zevenaar, The Netherlands, July 1976.
363. _____ Effect of food processing and preservation on nutrient content. Institute of Nutrition of Central America and Panama, Guatemala City, Guatemala, Central America, September 1976.
364. WENDT, T. M., J. H. CORNELL, and A. M. KAPLAN. Biodegradation of glycerol nitrates by microorganisms. 77th Annual Meeting, American Society for Microbiology, New Orleans, LA, 8-13 May 1977.

Other Publications

365. ANELLIS, A., and D. B. ROWLEY. Microbiological safety of irradiated beef. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976, Digest of Papers, p. 89 (1976).
366. BISHOV, S. J., Y. MASUOKA, and J. G. KAPSALIS. Synergistic effects of natural antioxidants in extending the shelf life of foods: the role of spices and herbs. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976, Digest of Papers, p. 103 (1976).

FOOD SCIENCES LABORATORY

Other Publications (continued)

367. GADEN, E. L., JR., M. H. MANDELS, E. T. REESE, and L. A. SPANO, eds. Enzymatic conversion of cellulosic materials: technology and applications. Biotechnol. Bioeng. Symp. no. 6 (1976), p. 319.
368. HENICK, A. S. Prediction of fat stability. In Objective Methods For Food Evaluation; Proceeding of a Symposium, National Academy of Sciences, Washington, DC, 1976, pp. 267-268.
369. JACOBS, H. L., and H. L. MEISELMAN. Customer morale & behavioral effectiveness: accomplishments and goals of psychological studies of food service systems. In Proc., Third International Meeting, Food for the Armed Forces, 14-17 October 1975. US Army Natick Research and Development Command, Natick, MA, 76-42-OTD, pp. 250-304 (AD A022 648).
370. KAPLAN, A. M. Review of "Biodegradation Investigation Techniques", by A. H. Walters, ed. In Amer. Soc. Microbiol. News, 43(6): 332-333 (1977).
371. KAPSALIS, J. G. The influence of water on textural parameters at intermediate moisture levels. In Water Relations of Foods. R. B. Duckworth (ed.). Academic Press, 1976, pp. 627-637.
372. MABROUK, A. F. Nonvolatile nitrogen and sulfur compounds in red meats and their relation to flavor and taste. In Phenolic, Sulfur, Nitrogen Compound, Food Flavors Symposium, 1975, ACS Symposium Series No. 26, American Chemical Society, Washington, DC, 1976, pp. 146-183.
373. _____ Beef flavor precursors and quality assessment. In Objective Methods For Food Evaluation; Proceeding of a Symposium, National Academy of Sciences, Washington, DC, 1976, pp. 249-252.

FOOD SCIENCES LABORATORY

Other Publications (continued)

374. MERRITT, C., JR. Correlation of chemical analysis with flavor changes. In Objective Methods For Food Evaluation; Proceeding of a Symposium, National Academy of Sciences, Washington, DC, 1976, pp. 252-258.
375. _____ Factors affecting the formation of radiolysis products. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976, Digest of Papers, p. 94 (1976).
376. MOSKOWITZ, H. R., and J. G. KAPSALIS. Psychophysical relations in texture. In Rheology and Texture in Food Quality. J. DeMan, V. Raspar, D. W. Stanley, and P. W. Voisey, (eds.). AVI Press, 1976, pp. 554-581.
377. _____, C. N. DUEOSE, and M. J. REUBEN. Flavor chemical mixtures - a psycho-physical analysis. In Flavor Quality: Objective Measurement. R. A. Scanlan (ed.). ACS Symposium Series No. 51, American Chemical Society, Washington, DC, 1977, pp. 29-44.
- RAHEMAN, A. R., J. W. SHIPMAN, S. J. WALLNER, D. E. WESTCOTT, R. A. SEGARS, and J. G. KAPSALIS. See entry no. 177.
378. REESE, E. T. Degradation of polymeric carbohydrates by microbial enzymes. In Recent Advances in Phytochemistry, The Structure, Biosynthesis and Degradation of Wood. F. A. Loewus, and V. C. Runeckles (eds.). Plenum Press, New York, 1977, Vol. 11, Chap. 8, pp. 311-367.
379. ROBERTSON, D. H., R. A. GRAHAM, and C. MERRITT, JR. Codification of mass spectra by functional group classification. Proc. Twenty-Fourth Annual Conference on Mass Spectrometry and Allied Topics, San Diego, CA, 9-13 May 1976, pp. 147-149 (1977).

FOOD SCIENCES LABORATORY

Other Publications (continued)

380. ROWLEY, D. B., G. J. SILVERMAN, and E. M. POWERS. Insuring the microbiological safety of military feeding systems. In Proc., Third International Meeting, Food for the Armed Forces, 14-17 October 1975. US Army Natick Research and Development Command, Natick, MA, 76-42-OTD, pp. 317-326 (AD A022 648).
381. _____, J. J. PREVITE, and H. SRINIVASA. A radiometric screening method for estimating the level of aerobic mesophilic bacteria in foods. In Rapid Methods and Automation in Microbiology. H. H. Johnson, and S. W. B. Newsom (eds.). Learned Information Ltd., England, 1976, p. 3.
382. SEGARS, R. A., and J. G. KAPSALIS. Recent advances in the measurement of the engineering properties of foods. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976, Digest of Papers, p. 193 (1976).
383. _____, and J. G. KAPSALIS. A two-dimensional visco-elastic model for simulating the compression of meat. In Characterization of Mechanical Properties of Food Materials. Yu Chen (ed). Rutgers University, New Brunswick, NJ, 1976, p. 139.
384. _____, and J. G. KAPSALIS. The use of joule heating for the rapid thawing and heating of frozen foods. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976, Digest of Papers, p. 68 (1976).
385. SPANO, L. A. Cellulose hydrolysis to glucose. First International Congress on Engineering and Food, American Society of Agricultural Engineers, Boston, MA, 9-13 August 1976, Digest of Papers, p. 30 (1976).

FOOD SCIENCES LABORATORY

Other Publications (continued)

TAUB, I. A., J. W. HALLIDAY, L. G. HOLMES, J. E. WALKER,
and F. M. ROBBINS. See entry no. 181.

386. THOMAS, M. H. Japan - Extension of shelf-life by irradiation;
India - Thiamine content of typical Indian foods; Holland -
A new approach to the determination of vitamins; Guate-
mala - Utilization of iron added to a dehydrated formu-
lated drink. Natick, MA, US Army Natick Research and
Development Command, 1977, 150 pp.

Patents

387. HOLMES, L. G. Method of determining soy material in foods.
US Patent No. 4,026,666, 31 May 1977.
388. SEGARS, R. A. Apparatus for determining the textural
qualities of food. US Patent No. 4,007,632, 15 February
1977.

INDEX TO AUTHORS
(Entry Numbers)

Adachi, A.	204	Bushnell, W.B.	49
Allen, A.L.	247	Bustead, R.L.	29, 35
Ammus, K.D.	114	Butler, D.P.	245
Anderson, E.E.	18, 19, 20	Byon, C.Y.	205
Anderson, W.G.	205	Byrne, R.J.	30, 31
Andren, R.K.	206, 207, 208, 274	Calabrese, F.P.	50
Andreotti, R.	233	Calhoun, W.K.	245
Andrews, W.P.	90	Canham, J.E.	30
Anellis, A.	209, 213, 275, 276, 365	Caspersen, J.M.	178
Angelini, P.	110, 221	Chakoian, G.	48
Arons, G.N.	64	Chalk, R.C.	210
Ball, D.H.	210	Chatterjee, S.	212, 278
Barbe, C.D.	243	Cheney, R.P.	114
Baritz, S.G.	29, 31	Chowdhury, M.S.U.	213
Barron, E.	65, 66, 246	Churchill, E.	51, 57
Bazinet, M.L.	190, 310	Churchill, T.	51
Bechtel, P.J.	255	Claus, W.D., Jr.	59, 68, 77, 79
Becker, E.	277	Cobean, N.L.	202, 306
Becker, R.	82	Coffin, L.G.	64
Beleau, M.H.	16	Cohen, J.S.	85, 91, 107, 108, 115, 164, 169, 179
Bensel, C.K.	49, 58, 67	Cohen, S.H.	159, 212, 214, 259
Berkowitz, D.	209	Consolazio, F.	30
Bidlingmeyer, B.A.	311	Cornell, J.H.	364
Bishov, S.J.	366	Crout, P.D.	193
Bissett, F.H.	191, 205, 210	Ctvrtnicek, T.E.	195
Bluhm, A.L.	192	Dateo, G.P.	238
Bodwell, C.E.	254	Davis, M.M.	30, 37
Brandier, P.	30, 37	DeBenedictis, J.A.	42
Brittin, W.A.	112	Decareau, R.V.	92, 93, 116, 117, 118, 119
Brockmann, M.C.	196	Delasanta, A.C.	61
Brooks, J.	96, 121	Devarakonda, V.	52
Brossut, R.	211	DiPietro, C.	190, 224
Brown, T.	253	Do, J.Y.	84
Brynjolfsson, A.	152	Douple, E.B.	215
Burke, P.T.	134		

Driver, M.G.	120	Hayon, E.	218, 219, 220, 232,
Dubose, C.N.	216, 244, 284,		239, 240, 268, 272
	377	Healy, E.	69
Durand, P.E.	59, 77, 79	Hearn, J.L.	6, 7, 8, 9, 10,
			11, 12, 13
Edelman, B.	277, 279	Heidelbaugh, N.D.	16
El-Bisi, H.M.	21, 22	Heiligman, F.	156, 164, 185
Emani, S.H.	157	Henick, A.S.	368
Erickson, R.J.	206, 274	Hill, T.M.	30
Esselen, W.B.	221	Hinnergardt, L.C.	87, 196
		Hoffman, M.Z.	114, 142, 268
Feeherry, F.E.	217, 235, 280,	Hoge, H.J.	193
	293	Hollender, H.A.	94, 95, 96, 121,
Feldman, D.	69		122, 165
Fiddler, W.	156, 185	Holman, J.H.	98
Flink, J.M.	157	Holmes, L.G.	149, 181, 225, 295,
Flood, J.H.	53, 54		387
Fox, M.	218, 219, 220	Howker, J.J.	80, 81, 106, 113,
Freeman, L.R.	221		170, 179, 186
Frenning, C.J.	43	Hu, K.H.	123, 124
		Hunt, D.A.	216, 284
Gaden, E.L., Jr.	367	Jacobs, H.L.	204, 369
Giffey, J.W.	222, 281, 282	Jarrett, R.D.	166
Gingrich, J.B.	223	Javier, V.S.	55
Glickstein, M.	187	Johnson, H.C.	167
Gorfein, H.	158, 159, 160	Johnson, R.	70
Graeber, R.C.	198, 269	Josephson, E.S.	167
Graham, R.A.	309, 379	Judge, T.H.	56
Graham, S.G.	62		
Greenberger, M.	194	Kahan, R.S.	81
Greendale, J.H.	77	Kanter, C.G.	88
Gut, M.	205	Kaplan, A.M.	194, 197, 226, 260,
			285, 286, 364, 370
Hadley, W.H.	195	Kaprielian, R.A.	182
Hahn, R.R.	94	Kapsalis, J.G.	177, 227, 228, 229,
Halliday, J.W.	149, 161, 166,		230, 254, 255, 262,
	181		287, 288, 289, 345,
Halpern, B.P.	238, 283, 307		366, 371, 376, 382,
Hand, C.W.	224		383, 384
Hansen, J.V.E.	78	Karel, M.	102
Haralampu, S.G.	162	Kayser, S.G.	311
Harkness, C.L.	14	Kemper, D.	209
Harris, N.E.	163		

Kenyon, J.L.	15	Maroney, J.F.	43
Killoran, J.J.	97, 125, 168, 169, 170	Martin, T.G., III.	82, 174
Kirejczyk, H.J.	29, 31	Mason, V.C.	91, 107, 108, 164, 179, 186
Klicka, M.V.	126	Masuoka, Y.	83, 366
Kluter, R.A.	160, 163, 196	Mattus, T.T., Jr.	34
Kruski, A.W.	231	McClaine, L.A.	45
Kueper, T.V.	222	McConville, J.T.	51, 57
Kulinski, M.B.	29, 31, 32, 56	McCormick, N.G.	235, 305
		McGarry, F.J.	63
Laible, R.C.	63, 71	McManus, L.R.	59, 77, 79
Lampi, R.A.	98, 101, 127, 171, 172	McMullen, J.J.	245
Latt, T.G.	253	McNutt, J.	133
Laubach, L.L.	57	Medeiros, J.E.	206, 208, 248, 263
Lazar, M.E.	99	Meiselman, H.L.	29, 30, 109, 200, 202, 216, 236, 237, 238, 283, 284, 306, 307, 369
Leitch, D.P.	33		
Lester, R.E., Jr.	1, 2, 3, 4, 5	Merola, A.	60
Levasseur, L.A.	191	Merritt, C., Jr.	110, 190, 221, 224, 227, 308, 309, 310, 311, 374, 375, 379
Levinson, H.S.	213, 217, 235, 280, 290, 291, 292, 293, 294		
Lichtin, N.N.	232	Meyers, S.	312, 313
Lillie, J.	100	Monego, C.J.	42, 43, 44
Livingston, G.	101	Monti, R.	43
Livingston, G.E.	35	Moon, R.D.	314
Lockhart, J.M.	58	Moorthy, P.N.	239, 240
Logan, M.E.	215	Morin, M.	276
		Moskowitz, H.R.	229, 241, 242, 243, 244, 376, 377
Maas, D.L.	198		
Mabrouk, A.F.	295, 296, 297, 298, 299, 300, 372, 373	Nakashima, M.	61
MacDonald, B.A.	173	Narayan, K.A.	231, 245, 315, 316
Macnair, R.N.	64, 71, 72, 73	Natsios, B.A.	60
Madden, R.	47	Nebesky, E.A.	90, 102, 134, 147
Madhavan, V.	232	Nichols, T.L.	246, 273
Mandels, G.R.	223, 301	Nii, I.T.	83
Mandels, M.	208, 233, 234, 248, 263, 302, 303, 304, 367	Niijima, A.	204
Mansur, R.T.	128, 129, 130, 131, 132	Nuss, E.M.	34

Nystrom, J.M.	207, 247, 317, 318, 319, 320	Robbins, F.M.	149, 181, 212, 259, 278
O'Callahan, J.C.	47	Robertson, D.H.	309, 379
Pearson, A.E.	46	Robertson, M.M.	163
Pearson, A.M.	254, 255	Roche, C.	233
Peitersen, N.	248, 249, 321, 322, 323, 324, 325, 326, 327, 328, 329	Rogers, M.R.	197, 260
Pillion, E.	197, 260	Ross, E.W.	17, 23, 24, 25, 26, 27, 28, 246
Pilsworth, M.N., Jr.	45, 193	Roth, L.M.	211, 261
Plummer, K.M.	189	Rowley, D.B.	213, 276, 332, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 365, 380, 381
Pober, Z.	250, 251	Rudenauer, P.	332
Porter, W.L.	252	Sacher, R.E.	310
Powers, E.L.	258	Salunkhe, D.K.	84
Powers, E.M.	83, 253, 330, 331, 380	Schafer, G.	189
Pratt, J.J., Jr.	223	Schnackenberg, D.D.	30
Prell, P.A.	103	Schulz, G.L.	141
Previte, J.J.	332, 339, 342, 381	Search, W.J.	195
Prifti, J.K.	93	Secrist, J.	104
Rahman, A.R.	120, 135, 136, 137, 138, 139, 140, 157, 158, 159, 160, 162, 175, 176, 177, 188, 189	Segars, R.A.	177, 230, 262, 288, 345, 382, 383, 384, 388
Rampton, J.H.	254, 255	Sellers, R.M.	105
Ramsley, A.O.	49, 60	Shattuck, E.	276
Rees, C.W.	178	Shieh, J.J.	142
Reese, E.T.	256, 257, 265, 301, 333, 367, 378	Shinohara, N.	100
Remington, P.J.	47	Shipman, J.W.	177
Reuben, M.J.	377	Shults, G.W.	80, 85, 91, 106, 107, 108, 113, 179, 186
Richardson, R.P.	38, 39	Shurtleff, S.J.	43
Richmond, R.C.	146, 215, 258, 334	Siebold, J.R.	30, 198, 199
Roach, J.F.	61	Silverman, G.J.	29, 221, 251, 346, 347, 380
		Simic, M.G.	100, 105, 114, 142, 143, 144, 145, 146, 180

Skinner, E.	236	Tuomy, J.M.	86, 87, 88, 89, 93, 111, 154, 183, 187
Smith, G.	43		
Smith, R.S.	29, 31, 32, 36, 40		
Snyder, O.P., Jr.	109	Van Dike, D.	16
Sousa, J.A.	61	Vijayakumar, P.	265
Spano, L.A.	263, 264, 348, 349, 350, 351, 352, 353, 367, 385	Vitaliano, J.J.	197, 260
Sprouse, J.	310	Wakefield, T.	245
Srinivasa, H.P.	339, 342, 381	Waldron, E.T.	61, 69
Srisara, B.	276	Walker, G.C.	87, 88, 89
Stefaniw, I.E.	29, 31, 32	Walker, J.E.	149, 161, 181, 212, 254, 255
Stein, E.S.	200, 354	Wallner, S.J.	177
Sternberg, D.	265, 266, 267, 301	Warwicker, J.O.	62
Stoneham, J.	36	Wasserman, A.E.	156, 185
Swantak, W.	189	Waterman, D.	202, 216, 306
Swift, J.	86	Watson, C.S.	273
Symington, L.E.	29, 30, 34, 198, 355, 356	Wei, K.C.	46
Szczablowski, J.W.	147	Welbourn, J.	2
Szczesniak, A.S.	228	Wells, R.D.	50
Szlachtun, A.J.	61	Wendt, T.M.	364
		Westcott, D.E.	93, 99, 112, 120, 155, 158, 159, 160, 162, 163, 177, 184
Tait, A.M.	268	White, R.M.	51, 57
Taub, I.A.	110, 114, 142, 144, 148, 149, 150, 151, 152, 153, 161, 180, 181, 182	Wierbicki, E.	80, 81, 85, 91, 106, 107, 108, 113, 115, 152, 156, 164, 169, 170, 179, 185, 186
Teghtsoonian, M.	277	Wilcox, H.A.	16
Thomas, M.H.	357, 358, 359, 360, 361, 362, 363, 386	Wiley, B.J.	203
Tisinger, J.L.	269	Wilkinson, W.	30
Tollenaar, D.	270, 271	Wilson, A.	74, 75, 76
Traxler, R.W.	201	Wu, M.T.	84
Treinin, A.	272		